SUMMARY OF STATEMENT BY LAKE H. BARRETT
BEFORE THE SUBCOMMITTEE ON ENERGY AND POWER
U.S. HOUSE OF REPRESENTATIVES
APRIL 29, 1997

INTRODUCTION

- Overview of the Administration's views on the importance of geologic disposal to providing a long-term solution to the commercial spent nuclear fuel problem; the cleanup of the nuclear weapons complex; the international consensus on permanent underground waste isolation and containment; the furtherance of our nation's nuclear non-proliferation goals; and support of our nuclear Navy's national defense mission.

BACKGROUND

- Overview of the program's legislative history.
- Short discussion of the revised program approach, with special attention on the repository viability assessment.

PROGRAM STATUS

- Brief discussion of the status and outlook for the Yucca Mountain viability assessment - considerable progress has been made over the past 4 years toward meeting our commitment to develop a long-term solution; completed over 80% of the surface-based testing at Yucca Mountain needed for licensing of the repository; completed construction of the five-mile underground exploratory studies facility and four of seven planned study alcoves; the emphasis of the underground work now shifts to scientific studies and completion of remaining alcoves to support and strengthen our understanding of the site and its ability to safely contain and isolate nuclear waste; to date, nothing indicates that the site would not be suitable.
- The program is about 18 months away from completing the viability assessment (by late 1998); continuing data collection and analyses are contributing directly to the completion of specific components of the assessment.
- The program is on schedule to complete the following milestones: draft repository environmental impact statement (EIS) in 1999; final repository EIS in 2000; Yucca Mountain site suitability determination in 2001, if suitable; submittal of a license application for repository construction to the NRC in 2002; and emplacement of waste in the repository in 2010, if licensed.
- The Department is proceeding with a dual-track approach to address the delay in the acceptance of spent fuel in 1998:
  - First, the Department plans to begin a process with contract holders to determine what actions under the standard contract would be appropriate to address the anticipated delay.
  - Second, the Secretary has committed the Department to continuing discussions with utilities, the States, and other stakeholders to seek mutually-agreeable solutions to the delay.

THE ADMINISTRATION'S CONCERNS REGARDING H.R. 1270

- The bill directs that an interim storage facility be sited in Nevada before the Yucca Mountain repository viability assessment is completed, thereby implying a prejudgement of the outcome of the viability assessment.
- The bill's deadline for receipt of spent fuel at the storage facility by January 2000 cannot realistically be met.
- The bill may undermine public confidence that a repository evaluation will be objective and technically sound.
- Future funding levels are not likely to be adequate for both interim storage and the permanent repository.
- The ultimate role of an interim storage facility is unclear.

CONCLUDING REMARKS

- Reiteration of the Administration's concerns with H.R. 1270.

STATEMENT OF
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U.S. DEPARTMENT OF ENERGY
BEFORE THE
SUBCOMMITTEE ON ENERGY AND POWER
COMMITTEE ON COMMERCE
U. S. HOUSE OF REPRESENTATIVES
APRIL 29, 1997

INTRODUCTION

Mr. Chairman and members of the Subcommittee, I am pleased to appear before you today to review technical progress in the Department's civilian radioactive waste management program, and to discuss legislation introduced by Representative Frederick Upton that would redirect our Nation's policy for the management and disposal of spent nuclear fuel and high-level radioactive waste. The Nation's need to adequately address the safe disposal of nuclear waste certainly demands the attention it continues to receive.

On this matter, the Administration's position is clear. We are committed to resolving the complex and important issue of nuclear waste disposal in a timely and sensible manner, consistent with sound science and protection of public health, safety, and the environment. The Administration believes that the federal government's longstanding commitment to permanent, geologic disposal should remain the basic goal of the high-level radioactive waste management policy.

The repository effort is essential not only for commercial spent fuel disposal but also to facilitate the cleanup of the nuclear weapons complex, further our nuclear non-proliferation goals, and support our nuclear Navy's national defense mission. The expectation that the Department can ultimately dispose of waste is an important factor in our effort to work with our stakeholders to manage our own spent fuel and to carry out our own post-Cold War cleanup efforts. Geologic disposal is also the technical foundation for our international position on nuclear nonproliferation, which assumes that foreign fuel of U.S. origin will be disposed of in the repository, and justifies our advocacy of limiting the international trade in weapons materials.

From a much more global perspective, decisions we make in the U.S. will have impacts throughout the international community. Our continuing endorsement of the international consensus on geologic disposal sets an example for the high standards of environmental protection, and nuclear safeguards and safety that we wish to promote worldwide.

Over the past four years, we have moved a great deal closer to meeting our commitment to develop a long-term solution. Indeed, we are only about 18 months away from having the scientific, technical, and financial information available to assess the viability of developing a radioactive waste repository at the Yucca Mountain site.

The Administration has significant objections to the pending legislation, and the President has indicated that he would veto the bill if it is presented to him in its current form. I will address specific objects and concerns later in my testimony. Let me first, however, provide some general background and a status report on the program.

BACKGROUND

Our Nation's policy for geologic disposal of nuclear waste was originally established by Congress in the Nuclear Waste Policy Act of 1982, and reaffirmed by the Nuclear Waste Policy Amendments Act of 1987 when Congress directed the Department to determine the suitability of Yucca Mountain, Nevada as a candidate repository site. Consistent with the Energy and Water Development Appropriations Act for 1997, the Department is addressing the remaining technical uncertainties at the Yucca Mountain site and plans to complete a viability assessment of the site by the end of 1998. These activities will bring us closer to a conclusion regarding the scientific prospects for geologic disposal.

In terms of gauging our future progress, the program is on schedule to complete a draft repository environmental impact statement (EIS) in 1999; a final repository EIS in 2000; the Yucca Mountain site suitability determination in 2001; if the site is suitable, submittal of the license application for repository construction to the Nuclear Regulatory Commission (NRC) in 2002; and emplacement of waste in the repository in 2010, if the site is licensed.

The viability assessment will be the first major input to policy makers concerning the repository undertaking, since the direction to study Yucca Mountain was given. By drawing upon the decade or more of data gathering and by placing emphasis upon the most significant remaining issues, the viability assessment will compile a comprehensive description of the design and operational concept for the repository. It will include a performance assessment of that concept in the Yucca Mountain geologic setting, and that conceptual presentation will be accompanied by a cost estimate and a plan for completing the license application.

In terms of its practical utility, the viability assessment is a management tool for the program which will guide the completion of work required for a Secretarial site recommendation to the President, which is the consequential decision point formally required by the Nuclear Waste Policy Act, as amended. The viability assessment is also expected to be useful in the development of an environmental impact statement and a license application to the NRC.

PROGRAM STATUS

Before addressing the Administration's views on H.R. 1270, I would like to quickly review the current status of our program and offer a brief outlook on future activities that we plan to undertake. The program is implementing a credible plan that maintains the momentum toward a national decision on the geologic disposal option.

Yucca Mountain. On April 25, 1997, we completed the construction of the five-mile underground exploratory studies facility. Based on that accomplishment, we will next shift the emphasis of the underground work to investigations of the Ghost Dance Fault and thermal testing. Thus far, we have found nothing to indicate that the Yucca Mountain site would be unsuitable for a permanent geologic repository. At Yucca Mountain, we have completed over

80% of the surface-based testing needed for licensing of the repository.

The data we are gathering from testing activities within the tunnel continue to confirm that Yucca Mountain's "natural" barrier is an important component of our strategy to isolate the waste that could be disposed in the proposed repository. For example, we are confirming that:

- water, from precipitation, has only minor infiltration into the mountain;
- the mountain's geologic layers limit the downward movement of water to the repository horizon;
- the thermal effect of the waste will impede the movement of water through the repository horizon; and
- the mineral make-up of the rocks below the repository horizon will slow the movement of radionuclides to the water table.

Construction and testing is underway on both the northern and southern Ghost Dance Fault alcoves, which will provide important information about the fault, a principal geologic feature of the repository setting. We will begin additional testing in the northern alcove in May of this year and will start additional testing in the southern alcove in later this year. We completed the main access and observation drift, or "tunnel," for the thermal testing facility in February of this year, and we began our initial heater tests last August, on schedule. These tests will provide information on how the rock will respond to heat generated by waste packages in the repository. Excavation of the heated drift was completed in February 1997 and heaters will be turned on in December 1997.

The Department is planning to initiate excavation of an additional exploratory, small diameter, east-west drift, which will include associated support for mapping and science. The additional underground exploration in an "east-west" excavation will further reduce the geohydrologic and other technical uncertainties about the site and improve our understanding of the processes at Yucca Mountain that are most critical to the performance and construction of a repository. The program is currently analyzing existing and future data needs to determine the most effective approach for the design and construction of this smaller diameter excavation.

We are using information from our ongoing analysis of the Yucca Mountain site to refine the repository concept of operations and to incorporate features into the repository and waste package designs that will enhance the system's performance and potentially lower its costs. The results of these analyses will be reflected in the Yucca Mountain viability assessment.

We also are making significant progress toward the completion of specific components of the viability assessment.

For the preliminary repository design, we have completed the advanced conceptual design for surface facilities, the underground operations area, and the engineered barrier system; refined the repository concept of operations; and are currently documenting site-scale models on geologic

processes to bound remaining scientific uncertainties.

For the total system performance assessment, we have completed a sensitivity analyses of the 1995 performance assessment, which will improve our evaluation of the significance to total system performance of various components of the natural and engineered barriers; we initiated a phased peer review of the performance assessment; we initiated testing on candidate container materials and issued waste characteristic and engineering materials characterization reports to update performance assessment models; and we are continuing work on developing a performance assessment to support the viability assessment, including the use of exploratory studies facility data in performance assessment models.

For the plan and cost estimate for the repository license application, we will complete the license application management plan by the close of FY 1997 and continue interactions with the NRC to address technical issues during the prelicensing phase.

For estimates of repository construction and operation costs, we issued the Nuclear Waste Fund Fee Adequacy Assessment in October 1996, which provides a life-cycle cost estimate of the total radioactive waste management system; and we are developing a new cost estimate for the Fall of 1998 in support of the viability assessment to reflect changes in program direction as a result of Congressional guidance and advances in repository or waste package designs and improved performance assessments.

Waste Acceptance. The Department formally notified standard contract holders by letter on December 17, 1996, that it would be unable to begin acceptance of their spent nuclear fuel in either a repository or an interim storage facility by January 31, 1998. Earlier this month, Secretary Peña met with representatives of the utility industry, environmental organizations, and state public utility commissions to discuss ways of mitigating the impacts of the delay. These discussions were constructive. The Department is now proceeding with the following dual-track approach to address the delay in the acceptance of spent fuel:

- First, we are planning to begin a process with contract holders to determine what actions under the standard contract would be appropriate to address the anticipated delay.

- Second, the Secretary has committed the Department to continuing discussions simultaneously with representatives of the utilities, States, and other stakeholders to seek mutually-agreeable solutions to the delay. Options that have been suggested for consideration include financial compensation and the Department taking title to some fuel at the reactor sites.

Non-Site Specific Storage Activities. In accordance with direction from the Administration and Congress, we started to conduct contingency non-site specific safety design and engineering analyses for a possible interim storage facility to reduce facility licensing time should a site be designated. For example, we are preparing a generic topical safety analysis report that will

contain the required analyses and evaluations necessary to demonstrate that operation of the facility would not endanger the health and safety of the public. We will submit the report to the NRC this spring, on schedule.

Transportation. During the past year, we developed a market-driven approach that will rely on the maximum use of private industry capabilities, expertise, and experience to accept and transport commercial spent nuclear fuel to a federal facility. We are presently working to establish a competitive procurement process to award fixed-price, multi-year, performance-based contracts.

The remainder of my remarks will address the Administration's concerns with H.R. 1270.

THE ADMINISTRATION'S CONCERNS REGARDING H.R. 1270

The bill directs that an interim storage facility be sited in Nevada before the Yucca Mountain repository viability assessment is completed, thereby implying a prejudgement of the outcome of the viability assessment. The Administration opposes any designation of an interim storage facility near Yucca Mountain before the viability assessment has been completed. The Administration believes that a decision on the siting of an interim storage facility should be based on objective, science-based criteria and should be informed by the viability assessment of Yucca Mountain.

The bill's deadline for receipt of spent fuel at the storage facility by January 2000 cannot realistically be met. We believe that approximately three and one-half years would be necessary to begin federal receipt of spent fuel once a site is designated. Such a schedule would require legislation permitting construction to take place during licensing,

The bill may undermine public confidence that a repository evaluation will be objective and technically sound. The forced siting of an interim storage facility in Nevada and the weakening of established environmental laws and regulations and public participation will jeopardize the credibility of any future decision on the suitability of the Yucca Mountain site. Any positive decision that might be reached about Yucca Mountain in the future could be perceived as unduly influenced by the presence of the interim storage site.

Future funding levels are not likely to be adequate for both interim storage and the permanent repository. Under H.R. 1270, the annual fees collected, up to an equivalent one mil level, from the electric utility industry would be equal to the level of annual appropriations paid from the Nuclear Waste Fund. This funding concept would effectively create a "user fee" orientation for the program, in that the utilities would be supporting only those activities that are annually budgeted for the program. However, the date assigned for interim storage in H.R. 1270 would result in additional funding requirements that would count against DOE's spending targets and the overall discretionary caps, forcing new budgetary pressures that would hurt DOE's ability to carry out its other vital missions. We believe that this would be detrimental to meeting our

overall program goal for long-term disposal. The focus on interim storage could result in competition for resources. This could divert limited discretionary funding from the repository program in the crucial stages of completion of site characterization and preparation of a license application.

And finally, the ultimate role of an interim storage facility is unclear. Some of the issues I have just discussed could jeopardize our long-term disposal strategy. Without geologic disposal, the notion of establishing an integrated radioactive waste management system would essentially "fall apart." We will be faced, instead, with the likely evolution of interim storage into our nation's long-term radioactive waste management approach. A concern that has been noted in the Administration's objection to the legislative proposals of the past Congress.

CONCLUDING REMARKS

H.R. 1270 is fundamentally at odds with the Administration's stated policy that a decision on the siting of an interim storage facility should be informed by the repository viability assessment, which is scheduled for completion in late 1998. The measure does not provide realistic schedules and deadlines for the operation of an interim storage facility or for the acceptance or transport of spent nuclear fuel from reactor sites around the country. The bill weakens and jeopardizes the credibility of the regulatory and institutional activities required to ensure adequate protection of health, safety, and the environment. And finally, the bill, while addressing equity for the ratepayers, it does not address the economic realities of a constrained Federal budget.

Thank you. I would be happy to address any questions that you may have.